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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY NATIONAL EXPOSURE RESEARCH LABORATORY P.O. BOX 93478 • LAS VEGAS, NV 89193-3478

NUV + 2 1997

OFFICE OF RESEARCH AND DEVELOPMENT

MEMORANDUM

Perchlorate Analysis Goose Farms Superfund Site SUBJECT:

FROM:

Ken W. Brown, Director, TSC
Environmental Sciences Division Jen W. Surm

TO: Farnaz Saghafi, RPM

Region II

Farnaz, please find attached the data package for the analyses of Goose Farms groundwater samples. These samples were analyzed by LAS Laboratories for perchlorate by ion chromatography, using the California Department of Health Services (CDHS) method dated June 3, 1997, Revision 0. The applicable laboratory SOP is LAS-0019-R07, 8/97, Rev. 7. The CDHS method was used because EPA, to my knowledge, does not have an approved validated method for the analysis of perchlorate.

The laboratory sample holding time was two days: samples were received on October 15, 1997 and analyses were conducted on October 17, 1997. Laboratory practices included the preparation of fresh standards daily, and a seven-point calibration with potassium perchlorate at the start of analyses. The concentrations used for calibration were 0, 5, 5, 12.5, 25, 250, and 1250 ppb. A 250 ppb standard of Mg (CC10₄), was also run. At the end of the day, a 250 ppb standard in reagent water was analyzed and the recovery checked, with an acceptance window of 90-110%.

As we discussed, none of the samples had detectable (method detection limit of 1 ppb) levels of perchlorate. There were no problems noted with the data package. Also for your information, a one-page discussion of perchlorate analysis is included from Air and Management News. This paper was written by Eric Miller of LAS Laboratories.

If you need additional information and/or clarification pertaining to the attached, please call me at (702) 798-2270.

with Attachment cc:

Kevin Mayer, Region IX



LAB TALK

DETERMINATION OF PERCHLORATE IN WATER AND SOIL SAMPLES: AN APPLICATION OF ION CHROMATOGRAPHY

Submitted by:

Eric Miller, Ph.D.

LAS Laboratories, Inc.

The perchlorate anion (ClO₄) is among the numerous environmental contaminants which can adversely affect human health. Because the perchlorate ion has the same electronic charge and approximately the same size as the iodide ion, it can mimic iodide in many enzymatic reactions. Thus, above a certain concentration (10 mg per day for an adult), perchlorate intereferes with the ability of the thyroid gland to properly utilize iodide. Indeed, perchlorate is used as a medical treatment for hyperthyroidism.

Since perchiorate does not occur naturally, its presence in water and soil samples is due to human activity. Because perchlorate is a powerful oxidizing agent, it is used as a reagent in analytical

chemistry (as perchloric acid) and in the manufactures of explosives and solid rocket fuel (as ammonium perchlorate). In an aqueous solutions, perchlorate salts and perchloric acid act as strong electrolytes; that is they are almost completely dissociated into perchlorate anions and metal or hydrogen cations. Because of this property, perchlorate in water samples (or in aqueous extracts of soils) can be readily detected and quantified by ion chromatography.

Ion chromatography is a liquid chromatographic technique in which the analytes are positively or negatively charged ions, rather than the neutral molecules which are analyzed by other types of liquid chromatography. For the determination of anions (such as chloride, sulfate, perchlorate, etc.), the chromatographic column is packed with an anion exchange resin, comprising inert resin beads to which positively charged radicals have been permanently attached. Thus, the entire column packing constitutes a large, positively charged porous solid to which negative ions are electrostatically attracted. In ion chromatography, the eluent is typically water in which a suitable salt has been dissolved. As the eluent solution flows through the column, anions from the eluent displace the anions already present in the column. The displaced anions are thus moved through the column toward the detector. Because different anions have different relative affinities for the column packing and for the eluent, the different types of anions are separated from one another and elute from the column at different times. By comparing the elution times and peak heights or areas of a sample with those of a standard, anions present in the sample can be identified and quantified, usually at ppm or ppb concentrations. Detection of eluted ions is normally accomplished by measuring the increase in electrical conductivity they engender in the eluent.

Recently, personnel of the California Health and Welfare Agency developed a procedure for determining perchlorate by ion chromatography with suppressed conductivity detection. Because perchlorate is a large, monovalent anion, it has a relatively low affinity for water. Thus, it is found necessary to use an eluent containing a comparatively high concentration electrolyte (sodium hydroxide solution) to elute the analyte in a reasonable amount of time (about eight minutes). The requisite analytical sensitivity is obtained by injecting a relatively large sample volume onto to the column. Sensitivity is also improved by passing the eluted sample through a strongly acidic cation exchange column. This treatment, called "suppression", replaces sodium ions in the eluent with hydrogen ions, which combine with the hydroxide ions in the eluent to form water. By converting the sodium hydroxide in the eluent water, suppression decreases the background electrical conductivity of the eluent from that of a solution of sodium hydroxide to that of pure water. The resulting decrease in baseline noise and drift enables the detection of much lower concentrations of perchlorate than would be possible in an unsuppressed eluent.

Perchlorate is currently manufactured and stored in the Las Vegas metropolitan area. Furthermore, about ten years ago, a second perchlorate manufacturing facility in the Las Vegas area was destroyed when a batch of the product (ammonium perchlorate) exploded. These facilities are located upstream of a major water impoundment - Lake Mead - which is part of the Colorado River system. Because California uses this water, the Health and Welfare Agency tested Lake Mead water samples for the presence of perchlorate. Perchlorate was detected, although in concentrations less than the 18 ppb limit set by the State of California. On being notified of these results, LAS Laboratories, Inc., of Las Vegas, adopted the California procedure for perchlorates. Determination of the method sensitivity according to EPA-accepted protocols showed a 5.0-ppb reporting detection limit and a 1.0-ppb instrument detection limit. Furthermore, it was found that anions commonly found in ground water, in lake water, in tap water, and in soil do not interfere with the determination of perchlorate. Thus, the method is both analytically accurate and simple, since no sample pre-treatment (other than filtration) is necessary. Analysis of tap water from various locations throughout the Las Vegas area indicates a perchlorate concentration of 10-ppb, which is roughly half the California limit. Surface water samples taken from above and below the current perchlorate manufacturing facility show a dramatic increase (to about 1680-ppb) downstream of the facility. One sample of well water taken from the facility site had a concentration of 3.7 million-ppb (0.37 % by weight) perchlorate. A program is currently underway to measure perchlorate concentrations throughout the site of the former manufacturing facility.

Clearly, the ion chromatographic method for perchlorate has provided valuable information for the characterization of water and soil samples, and for the identification of pollution sources, in the Las Vegas area. The sensitivity of the method, its freedom from interferences, and its simplicity should make it useful for the examination of other sites as well.



LAS Laboratories Inc.

LOCKHEED MARTIN ADVANCED ENVIRONMENTAL SYSTEMS

ANALYTICAL DATA REPORT

FOR

PERCHLORATE BY IC

LOG-IN NUMBER:

L10742

QUOTATION NUMBER:

Q728949

DOCUMENT FILE NUMBER:

<u>1016123</u>



October 20, 1997

Lockheed Martin Advanced Environmental System Testing & Treatability Laboratory 950 Pilot Road Suite A Las Vegas, NV 89119

RE:

Log-in No.

L10742

Quotation No.

Q728949

Document File No.

1016123

The attached data report contains the analytical results of samples that were submitted to LAS Laboratories, Inc. on 16 October 1997.

The temperature of the cooler upon receipt was 4°C. All sample containers did not coincided with the chain-of-custody documentation. All sample containers were received intact. Samples were received in time to meet the analytical holding time requirements. All discrepancies (if applicable) identified upon receipt of the samples have been forwarded to the client and are documented in the enclosed chain-of-custody records. (See attached Sample Receiving Checklist for details).

The case narratives included in the following attachments provide a detailed description of all events that occurred during sample preparation, analysis, and data review specific to the samples and analytical methods requested.

A list of data qualifiers, chain-of-custody forms, sample receiving checklist, and log-in report are also enclosed representing the samples received within this group.

If you have any questions concerning the analysis or the data, please call Jenny Davis at (702) 361-3955, ext 213. If you are unable to contact the Client Services Representative, please call Dan Fischer, Client Services Manager, at extension 240.

Release of this data report has been authorized by the Laboratory Director or the Director's designee as evidenced by the following signature.

Sincerely,

Jenny L. Davis

Client Services Representative

cc: Client Services

Document Control

Log-in No. L10742 Quotation No. Q728949 Document File No. 1016123 Page 3

CASE NARRATIVE INORGANIC NON-METALS ANALYSES

The routine calibration and quality control analyses performed for this batch include as applicable: initial and continuing calibration verification, initial and continuing calibration blanks, method blank(s), laboratory control sample(s), matrix spike sample(s), and duplicate sample(s).

Preparation and Analysis Requirements

- All samples were received on October 16, 1997. The samples were logged in as L10742. The samples were prepared and analyzed for:
 - A. Perchlorate by IC
- Sample GF-RB-01 (L10742-5) was used for the matrix spike and matrix spike duplicate analysis.

Method Blanks

• The concentration levels of requested analytes in method blanks were below the reporting detection limits.

Holding Time Requirements

All samples were analyzed within method-specific holding times.

Internal Quality Control

All Internal Quality Control were within acceptance limits.

Shellee McGrath Prepared By

October 20, 1997

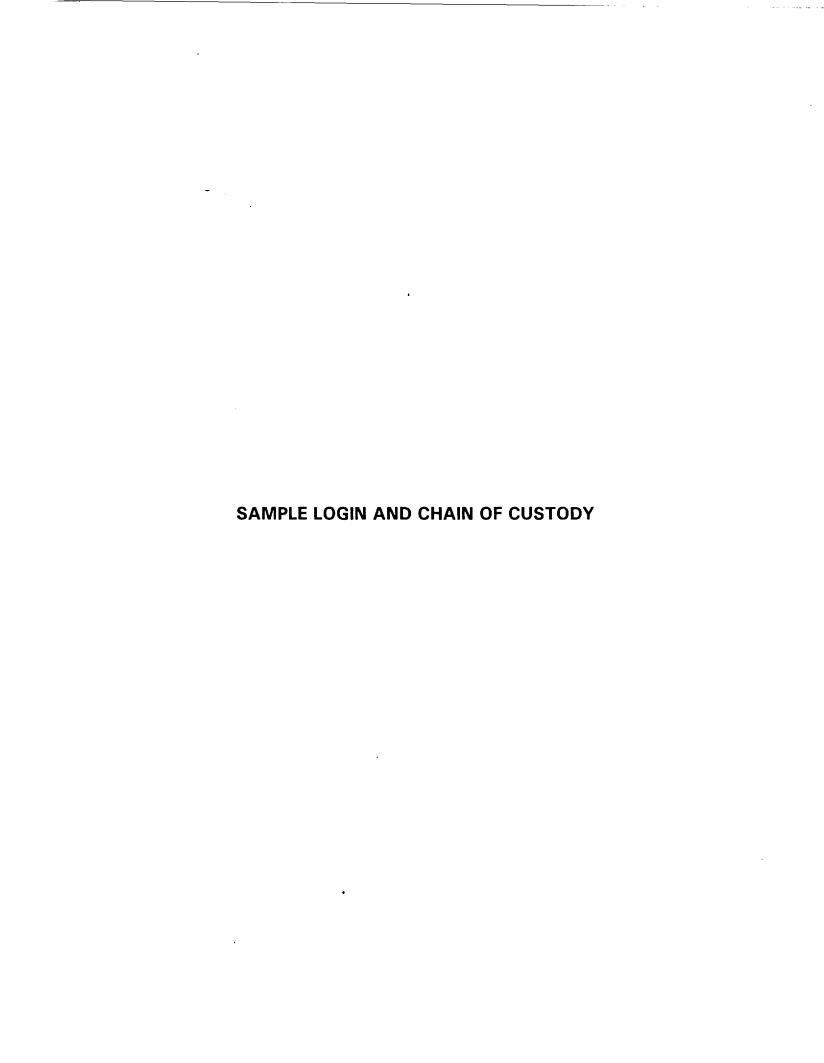
Date

LAS Laboratories, Inc. DATA QUALIFIERS FOR INORGANIC ANALYSES

[Revised 02/28/97]

	For Use on the Analytical Data Reporting Forms
В	For CLP Analyses Only Reported value is less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
С	For Routine, Non-CLP Analyses Only Any constituent that was also detected in the associated blank whose concentration was greater than the reporting detection limit (RDL), or instrument detection limit (IDL) for client samples that require "B" flags.
D	Presence of high levels of interfering constituents required dilution of sample which increased the RDL by the dilution factor.
E	Estimated value due to presence of interference.
Н	Sample analysis performed outside of method-or client-specified maximum holding time requirement.
M	For CLP Analyses Only Duplicate injection precision criterion was not met.
N	Matrix spike recovery exceeded acceptance limits.
S	Reported value was determined from the method of standard addition.
U	For CLP Reporting Only Constituent was analyzed for but not detected (sample quantitation must be corrected for dilution and percent moisture).
W	For AAS Only Post-digestion spike for Furnace AAS did not meet acceptance criteria and sample absorbance is less than 50% of spike absorbance.
X, Y, or Z	Analyst-defined qualifier.
*	Relative percent difference (RPD) for duplicate analysis exceeded acceptance limits.
+	Correlation coefficient (r) for the MSA is less than 0.995.
	For Use on the QC Data Reporting Forms
a¹	The spike recovery and/or RPD for matrix spike and matrix spike duplicates cannot be evaluated due to insufficient spiking level compared to the elevated sample analyte concentration.
\mathbf{b}^{1}	The RPD cannot be computed because the sample and/or duplicate concentration was below the RDL.

¹ Used as footnote designations on the QC summary form.



LAS LABORATORIES LOGIN CHAIN OF CUSTODY REPORT (ln01) Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)
Project: LM PERCHLORATE

Caboratory Sample Hus			Client Sample Numbe	Collect Receive PREDate
L10742-1 Field Rins Location:			GF-RB-01 Temp 4	08-OCT-97 16-OCT-97 20-OCT-97
Water			HLORATE BY IC	Hold:05-NOV-97
L10742-2 Field Rins Location:	ate B	lank,	GF-RB-01 Temp 4	08-OCT-97 16-OCT-97 20-OCT-97
Water		NONE		Hold: 18-OCT-97
L10742-3 Field Rins Location:			GF-RB-01 Temp 4	08-OCT-97 16-OCT-97 20-OCT-97
Water		NONE		Hold:18-OCT-97
L10742-4			GF-RB-01	08-OCT-97 16-OCT-97 20-OCT-97
Field Rins Location:			Temp 4	
		NONE		Hold: 18-OCT-97
L10742-5			GF-HW-14	08-0CT-97 16-0CT-97 20-0CT-97
MS/MSD, Te Location:	mp 4 RFG02	-21 A		
Water			HLORATE BY IC	Hold: 05-NOV-97
L10742-6			GP-MW-14	08-0CT-97 16-0CT-97 20-0CT-97
MS/MSD, Te Location:		-21 A		
Water		NONE		Hold: 18-OCT-97
L10742-7			GF-NW-14	08-OCT-97 16-OCT-97 20-OCT-97
MS/MSD, Te Location:	mp 4 RFG02	-21 λ		
Water	1 S	NONE		Hold: 18-OCT-97
L10742-8 MS/MSD, Te Location:	mp 4	-213	GP-MW-14	08-OCT-97 16-OCT-97 20-OCT-97
Water		NONE		Hold: 18-OCT-97
MS/MSD, Te	mp 4	and the following the	GP-MW-14	08-OCT-97 16-OCT-97 20-OCT-97
Location: Water		-21A NONE		Hold: 18-OCT-97

LAS LABORATORIES LOGIN CHAIN OF CUSTODY REPORT (1n01) Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)
Project: LM PERCHLORATE

Laboratory Sample Num		Client Sample Number	Collect Date	Receive Date P	Due R Date
L10742-10 MS/MSD, Te Location:	mp 4		08-0CT-97	16-OCT-97	20-0CT-97
Water		NONE	Hold:18-OCT-97		
L10742-11 MS/MSD, Te Location:	mp 4	GF-MW-14	08-OCT-97	16-0CT-97	20-0CT-97
Water		NONE	Hold:18-OCT-97		
L10742-12 MS/MSD, Te	mp 4	GF-WW-14	08-0CT-97	16-OCT-97	20-0CT-97
Location: Water		NONE	Hold:18-OCT-97		
L10742-13 MS/MSD, Te	mp 4	GF-NW-14	08-0CT-97	16-OCT-97	20-0CT-97
Location: : Water	RFG02		Hold:18-OCT-97		
L10742-14 MS/MSD, Te		GF-HW-14	08-OCT-97	16-0CT-97	20-0CT-97
Location: : Water		-21A NONE	Hold:18-OCT-97		
L10742-15 MS/MSD, Te	mp 4	GP-MW-14	08-0CT-97	16-OCT-97	20-0CT-97
Location: : Water			Hold:18-OCT-97		
L10742-16 MS/MSD, Te	mp 4	GF-NW-14	08-0CT-97	16-0CT-97	20-0CT-97
Location: :		-21A NONE	Hold:18-OCT-97		
L10742-17 Temp 4		GF-NW-00	0 8-007-9 7	16-OCT-97	20-0CT-97
Location: :		-22A PERCHLORATE BY IC	Hold: 05-NOV-97		
L10742-18 Temp 4		G F-NW -00	08-0CT-97	16-OCT-97	20-0CT-97
Location:		-22A NONE	Hold:18-0CT-97		

LAS LABORATORIES LOGIN CHAIN OF CUSTODY REPORT (ln01) Oct 16 1997, 05:03 pm

Login Number: L10742 Lockheed Martin Adv. Env. Sys. (LMAES) Project: LM PERCHLORATE Account: 123

			110,400. 1	A PERCHEORATE	
	iber		Client Sample Number	Collect Date	Receive Due may be Date PR Date
L10742-19 Temp 4			GF-MW-00	08-0CT-97	16-OCT-97 20-OCT-97
Location: Water	RFG		-22A NONE	Hold:18-OCT-97	•
L10742-20 Temp 4			GF-NW-00	08-OCT-97	16-OCT-97 20-OCT-97
Location: Water	RFG		-22A NONE	Hold:18-0CT-97	
L10742-21 Temp 4			GP-NW- 03	09-0CT-97	16-0CT-97 20-0CT-97
Location: Water	RFG(-22A PERCHLORATE BY IC	Hold:06-NOV-97	
L10742-22 Temp 4			GF-NW-03	09-0CT-97	16-OCT-97 20-OCT-97
Location: Water	RFG(-22A NONE	Hold: 19-0CT-97	
L10742-23 Temp 4			GP-NM-03	09-0CT-97	16-OCT-97 20-OCT-97
Location: Water	RFG(-22A NONE	Hold:19-0CT-97	
L10742-24 Temp 4		19: XX	GF-MW-03	09-OCT-97	16-OCT-97 20-OCT-97
Location: Water	RFG(-22A NONE	Hold:19-0CT-97	
L10742-25 Temp 4			GF-MW-06	09-0CT-97	16-OCT-97 20-OCT-97
Location: Water	RFG(-22A PERCHLORATE BY IC	Hold:06-NOV-97	
L10742-26 Temp 4			GF-NW-06	09-0CT-97	16-OCT-97 20-OCT-97
Location: Water			-22A NONE	Hold:19-OCT-97	
L10742-27 Temp 4	rinanasiya Shadhar y		GF-NW-06	09-0CT-97	16-OCT-97 20-OCT-97
Location: Water	RFG(-22A NONE	Hold:19-0CT-97	

LAS LABORATORIES LOGIN CHAIN OF CUSTODY REPORT (ln01) Oct 16 1997, 05:03 pm

Login Number: L10742 Lockheed Martin Adv. Env. Sys. (LMAES) Project: LM PERCHLORATE Account: 123

Laborator Sample Nu	, ab e r	Client Sample Number	Collect Racelve M Due Collect Date Palate 2002
L10742-28 Temp 4		G P-N W-06	09-0CT-97 16-0CT-97 20-0CT-97
Location: Water		-22A NONE	Hold: 19-OCT-97
L10742-29 Temp 4		GF-NW-05	09-OCT-97 16-OCT-97 20-OCT-97
Location: Water		-23A PERCHLORATE BY IC	Hold: 06-NOV-97
L10742-30 Temp 4		GP-HW-05	09-0CT-97 16-0CT-97 20-0CT-97
Location: Water		-23A NONE	Hold: 19-0CT-97
L10742-31 Temp 4		G P-N W-05	09-OCT-97 16-OCT-97 25-OCT-97
Location: Water		-23A NONE	Hold:19-OCT-97
L10742-32 Temp 4		GP-NW-05	09-0CT-97 16-0CT-97 20-0CT-97
Location: Water		-23A NONE	Hold:19-OCT-97
L10742-33 Temp 4		GF-MW-608B	09-0CT-97 16-0CT-97 20-0CT-97
Location: Water		-23A PERCHLORATE BY IC	Hold: 06-NOV-97
L10742-34 Temp 4		GF-NW-608B	09-0CT-97 16-0CT-97 20-0CT-97
Location: Water		-23A NONE	Hold: 19-0CT-97
L10742-35 Temp 4		GF-NW-608B	09-0CT-97 16-0CT-97 20-0CT-97
Location: Water		-23A NONE	Hold: 19-OCT-97
L10742-36 Temp 4		GF-MW-16B	09-0CT-97 16-0CT-97 20-0CT-97
Location: Water		-23A PERCHLORATE BY IC	Hold: 06-NOV-97

LAS LABORATORIES LOGIN CHAIN OF CUSTODY REPORT (1n01) Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)
Project: LM PERCHLORATE

	Client Sample Num	CO), KOT C. MAGOS (VA. 11.11) COESTI POR Des : Data de la C. 172 (M. 14.14) COESTI Des : PR (M. 14.14) COESTI PR (
L10742-37 Temp 4	GP-NW-16B	09-OCT-97 16-OCT-97 20-OCT-97
Location: Water	2-23A S NONE	Hold:19-OCT-97
L10742-38 Temp 4	GF-MW-16B	09-0CT-97 16-0CT-97 20-0CT-97
Location: Water	2-23A S NONE	Hold: 19-0CT-97
L10742-39 Temp 4	G F-W -16B	09-007-97 16-007-97 29-007-97
Location: Water	2-23A S NONE	Hold: 19-OCT-97
L10742-40 Temp 4	GF-IN-01	10-OCT-97 16-OCT-97 20-OCT-97
Location: Water	2-23A S PERCHLORATE BY	IC Hold: 07-NOV-97
L10742-41 Temp 4	GP-IN-01	10-OCT-97 16-OCT-97 20-OCT-97
Location: Water	2-23A S NONE	Hold:20-OCT-97
L10742-42 Temp 4	GF-IN-01	10-OCT-97 16-OCT-97 20-OCT-97
Location: Water	2-23A S NONE	Hold: 20-OCT-97
L10742-43 Temp 4	GP-IN-01	10-0CT-97 16-0CT-97 20-0CT-97
Location: Water	2-23A S NONE	Hold: 20-OCT-97
L10742-44 Temp 4	GP-EF-01	18-0CT-97 16-0CT-97 20-0CT-97
Location: Water	2-23A S PERCHLORATE BY	IC Hold: 07-NOV-97
L10742-45 Temp 4	G F-EF- 01	16-0CT-97 16-0CT-97 20-0CT-97
Location: Water	2-23A S NONE	Hold: 20-OCT-97

LAS LABORATORIES LOGIN CHAIN OF CUSTODY REPORT (ln01) Oct 16 1997, 05:03 pm

Login Number: L10742
Account: 123 Lockheed Martin Adv. Env. Sys. (LMAES)

Project: LM PERCHLORATE

L10742-46			GF-EF-01 10-OCT-97 16-OCT-97 20-OCT-97
Temp 4 Location:	PFC	02-231	
Water	1	S NONE	Hold: 20-OCT-97
L10742-47			GF-EF-01 10-OCT-97 16-OCT-97 20-OCT-97
Temp 4			
Location:	RFG	02-23A	
Water	1	S NONE	Hold: 20-OCT-97

Location: Water

1 S DAVIS 1 S INORG TYPE 2 RPT Water

Page 6

Environmental Protection Agency - Region II
Environmental Services Division
EDISON, NEW JERSEY 08817

Name of Unit and Address: Goose Farm Site								
Plumsted Township, Ocean County, NJ								
Sample Number	Number of Containers	Description of Sampl	les					
091325	4	GF- RB-01 Pe	echlorate Anun An	Alysis	: 1-16	+ Plustic JAR & 3-20	ml Gl	us Jar
203317	12	GF-MW-14 Per	echlorate Anion Analy:	515: 3-	1 Lt Plast	ncJar & 9-250ml Gl	ass Za	.R
203318	4	GF-NW-00 Per	echlorate Anion Anal	1515:1-	14 Place	the JAR & 3-250Ml G	lass J	AR.
203319	Ų		Ame 48 203318	·				
203320	Ų	GF-MW-06 3	Ame As 203318					
203321			TAME AS 203318					
203322	4	GF-MW-608E	3 JAME AS 2033	81				
203323	¥	GF-MW-168	JAME AS 20331	8-				
203324	Ų	GF-IN-OL	SAME AS 20331	8			٠.	
203325	4	GF-EF-OI	SAME AS 20331	8			•	
			•					
		esponsibility for Sample:					Time	Date
i	_	A Merecas	. CH. D. Bloke	\rightarrow			1500	19/19/
Sample	Relina	quished By:	Received By:	Time	Dete	Region for Change of	Custody	
Number			FEDERAL EXPRESS AIR BILLS#	1530	10/15/			
All	M	in the	4178284143		1797			
			4178284154	<u> </u>				
Sample Number	Reline	quished By:	Received By:	Time	Dete	Reason for Change of OFTHATE TO LAB	Custady	
(Wa	46		1048	97	Reason for Change of - REZEASE TO LAB		
Ì		U.						
Sample	Reline	quished By:	Received By:	Time	Date	Reason for Change of	Custody	
Number		· •						
		_						
Sample	Relina	juished By:	Received By:	Time	Date	Reason for Change of	Custody	
Number		1	101	-/	10/10			
			WHY	1048	97			
	<u> </u>		1 1	<u> </u>				

				
Project Name	some farm &	angling to	vent	Samples to:
Collector(s) M. D.	envo/H. HERCADO	Affiliation (//	S.EPA	Bact Bio Chem Other
001100101(0)2				
SAMPLING METHOD (Circle)				
	Dredge Ponar Manual	LUMS CODE		Station No.
Niskin Net	Seine Trawl Bucket	DATA BASE	CODE	E F 00 011
Trowel Crea				GF-RB-OLL
	iii Dippei	STA. TYPE CO	ODE	Sample Depth (Ft.)/Fac. Loc. Code
Automatic Other	Floor			
Oprer	2700			
] []
SUBSTRATE TYPE	(Circle) Aqueous S	Sediment Sludg	ge Oil Biological	Lab Number
	Solvent Ex	tract Other ()	001225
			,	091325
BOD — Seed Supp	lied Yes No	Source:		Type of Sample
	Preparation (Circle)	Sample S	Source Type (Circle)	Grab Composite
Container	Cleaning Procedure	Landfill	Industrial	Time Space
Atass Jar	Detergent Wash	Leachate	Effluent	1 V I'iiie Space
(1 *		Process Stream	L
Plastic Jar	Water Rinse	Drum		Collection (Ending) Date
Metal	Acid Rinse	Test Well	Holding Pond	Yr Mo Day
POA Vial	Solvent Rinse:	Depth:	Drum	11917101819171
Cubitainer	Acetone	Other:	_ Waste Pile	Ending Time (24 Hr)
Acetate Core	Hexane		Municipal Treatment	Ending Time (24 Fit)
Paper Cap	Methylene Chloride	Storage Tank	Influent	1/2/20
Teffor Cap	Other (Specify):	Тор	Effluent-Cl	
Foil Cap	10.1	Middle	Effluent-Non Cl	Beginning Date
Other	precleaned	Bottom	Sludge	Yr Mo Day
	From E.S.S	Truck	Ambient	
Preservation	GIRSSWORF	Drum	Lake	
Acid	1/am ECS	Tank	Stream	Beginning Time (24 Hr)
	- KOM EISIS	Other	_ Pond	Segiming Time (2411)
Solvent	-	Otner	_[
Chemical	-		_ Ocean	
vvet ice		Wells	Estuary	pH
Dry Ice		Menitoring		
Ambient	·	Production		
Other	-1	Drinking		Sample Temp. (°C)
	-	Private		Sample Temp. (*C)
Sample Location D	Description:			11 1 1 1
	······································		`	
,	FARM'S - RB	1 1/ Fie	Id Queate	DO (mg/l)
(700SE	TARMS KIN		CICIOSATE	
			BLANK)	
				Cond. (uMHOS/CM)
	# 100 m			Cond. (umriosicm)
				Salinity(%,)
Remarks:				
-	/ / /	1 /		
Ponchla	inte ANION X	TWALY SIS	•	Sample Callé
1 5/6 6/110			-	Sample Split
1.11.4	laste ANION P	N 3-257	IN Glass VAR	☐ Yes 12 No
1-14	CESTIC VITTO AT		-, -,, -, -, -, -, -, -, -, -, -, -	
/ /	to 4°C			If Yes With Whom?
Ceo/	40 7 C			Receipt Yes No
				1.000 pt 2 100 to 110

· · · · · · · · · · · · · · · · · · ·					
Project Name	soose Farm =	Sampling E	vert	Samples to:	
Collector(s) H.De	TUNO M. HERCADO A	Hilliation U.	S. EPA	Bact Bio Chem Other	
Ochector(s) <u>-11-5-</u>		mation		J Suck Bio Silvani Other	
SAMPLING METHOD (Circle)					
	, ,	LDMS CODE		Station No.	
	redge Ponar Manual	DATA BASE C	ODE		
Niskin Net	Seine Trawl Bucket	DATA DAGE C		16F-HW-114 111	
Trowel Cream	n Dipper	STA. TYPE CO	DDE		
Automatic				Sample Depth (Ft.)/Fac. Loc. Code	
Other Low					
		<u> </u>		41 1 1 1	
SUBSTRATE TYPE (Circle) Aqueous So	ediment Sludg	e Oil Biological	Lab Number	
	3.000		,	Lab Homber	
	Solvent Ext	ract Other ()	203317	
				203311	
BOD — Seed Suppli	ed 🗆 Yes 🗆 No	Source:		Type of Sample	
Sample F	Preparation (Circle)	Sample S	Source Type (Circle)	Grab Composite	
Container	Cleaning Procedure	Landfill	Industrial	Time Space	
Glass Jar	Detergent Wash	Leachate	Effluent	1	
Plastic Jar	Water Rinse	Drum	Process Stream		
	1		1	Collection (Ending) Date	
Metal	Acid Rinse	Test Well	Holding Pond	Yr Mo Day	
POA Vial	Solvent Rinse:	Depth:	Drum	1971/008	
Cubitainer	Acetone	Other:	Waste Pile	The state of the s	
Acetate Core	Hexane		Municipal Treatment	Ending Time (24 Hr)	
Paper Cap	Methylene Chloride	Storage Tank	Influent		
Tefion Cap	Other (Specify):	Тор	Effluent-Cl	1/14/20	
Foil Cap		Middle	Effluent-Non Cl	Beginning Date	
•	Redeared	Bottom	Sludge	Yr Mo Day	
Other	"Capana				
	Glassware	Truck	Ambient		
Preservation	FROM ESS	Drum	Lake		
Acid	TROM ESS	Tank	Stream	Beginning Time (24 Hr)	
Solvent	İ	Other	_ Pond		
Chemical			_ Ocean		
Wet Ice]	Wells	Estuary	au	
Dry Ice		Monitoring	7 ´	pH	
Ambient		Production]		
	İ	Drinking	İ		
Other	1	_		Sample Temp. (*C)	
		Private			
Sample Location De	scription:				
	Fage 1/11-14			DO (mg/l)	
(J005€	Fran, HW-14				
				Cond. (uMHOS/CM)	
				Cond. (dwinosicm)	
				Salinity(%,)	
Remarks:	110 111.7			1	
	45/M5D				
-					
Perchlorate A	Sample Split				
7 - 114	Perchlerate Anion Analysis: 3-14 Plastic JAR And 9-250M Glass JARS				
				If Yes With Whom?	
Cod-to	4°C			Receipt Yes No .	
4 7 9	•			Receipt Yes No .	

LIOHZ

			· · · · · · · · · · · · · · · · · · ·	
Project Name	cose Farm J	angoling Eve	ent	Samples to:
Collectories M. De	NNO / H. HERCHOO,	Affiliation //	S. EPA	Bact Bio Chem Other
Contestor(s)				J Back Gille Giller
SAMPLING METHOD	(Circie)	LDMS CODE		
Kemmerer Dr	edge Ponar Manual	LOMS CODE		Station No.
Niskin Net	Seine Trawi Bucket	DATA BASE C	ODE	
Trowel Cream				15F1-4W-001111
	- Dipper	STA. TYPE CO	DE	Sample Depth (Ft.)/Fac. Loc. Code
Other Low				Campie Dopin (1 c.) 1 ac. 200. Code
Other				
				1
SUBSTRATE TYPE (C	Circle) Aqueous S	ediment Sludg	e Oil Biological	Lab Number
	Solvent Ex	tract Other (')	000010
			,	203318
BOD — Seed Supplie	ed 🗆 Yes 🗆 No	Source:		Type of Sample
Sample P	reparation (Circle)	Sample S	ource Type (Circle)	Grab Composite
Container	Cleaning Procedure	Landfill	Industrial	Time Space
Glass Jar	Detergent Wash	Leachate	Efficient	1 0 1 1 1 1 1 1 1 1 1
Plastic Jar	Water Rinse	Drum	Process Stream	Callandar (Fa ii) 5 d
Metal Metal	Acid Rinse	Test Well	Holding Pond	Collection (Ending) Date
POA Vial	Solvent Rinse:	Depth:	Drum	OYT MO Day
		4 '	Waste Pile	971008
Cubitainer	Acetone	Other:		Ending Time (24 Hr)
Acetate Core	Hexane		Municipal Treatment	
Paper Cap	Methylene Chloride	Storage Tank	Influent	11/450
Teflon Cap	Other (Specify):	Тор	Effluent-CI	
Foil Cap	Precleaned	Middle	Effluent-Non Ci	Beginning Date
Other	/zeccanosc	Bottom	_ Sludge	Yr Mo Day
	Gassware from ESS	Truck	Ambient	
Preservation	E. ESS	Drum	Lake	
Acid	THEM COS	Tank	Stream	Beginning Time (24 Hr)
Solvent		Other	Pond	
Chemical		<u> </u>	Ocean	
Wel Ice		Weils	Estuary	all
Dry Ice		Monitoring	1 .	pH
Ambient		Production		
Other		Drinking	İ	
<u> </u>		Private		Sample Temp. (°C)
		1,	<u> </u>	
Sample Location De	scription:			
	_			DO (mg/l)
<u></u>	em, HW-00			
GOOSETHE				
				L
				Cond. (uMHOS/CM)
				Salinity(% _a)
Remarks:				
Parablando	ANIM AWALYSIS	, '		
I CK CHI COVERTE	-	1 1 2 - 1	KI - Trac	Sample Split
1-11+0	ANION ANALYSIS VastaTAR AND	3 - 250M	ADVICE CIMES	☐ Yes ☑ No
1-1L1 PC	1/4			If Yes With Whom?
	1 to 4°C			I 162 MILLI MINORI
C601	, , ,)			Receipt 🗆 Yes 🗆 No
Form: FTB RPD-11-82-2				

Project Name	ose Fram So	moling Eve	ent	_ Samples to:
	WO/M.HERCADO		CEPA	
 Collector(s)ZAZ-5/EZ	SHOTT HEREASE	Attiliation		Bact Bio Chem Other
SAMPLING METHO	D (Circle)	LDMS CODE		
	redge Ponar Manual	LDW2 CODE	-	Station No.
Niskin Net	Seine Trawl Bucket	DATA BASE C	ODE	
Trowel Crear				5F-HW-03
	ii Oibbei	STA. TYPE CO	DDE	Sample Depth (Ft.)/Fac. Loc. Code
Automatic Other	2 F 600	1		
 Other		<u> </u>		
CURCIDATE TYPE 4	Cirole	Sediment Sluda	o Oil Biological	
SUBSTRATE TYPE (Circle) Aqueous S	Sediment Sludg	e Oil Biological	Lab Number
	Solvent Ex	ctract Other ()	203319
 				
BOD — Seed Suppli		Source:		Type of Sample
Sample F	Preparation (Circle)		Source Type (Circle)	Grab Composite
Container	Cleaning Procedure	Landfill	Industrial	Time Space
Glass Jar	Detergent Wash	Leachate	Effluent	
Plastic Jar	Water Rinse	Drum	Process Stream	Collection (Ending) Date
Metal	Acid Rinse	Test Well	Holding Pond	Yr Mo Day
POA Vial	Solvent Rinse:	Depth:	Drum	1977000
Cubitainer	Acetone	Other:	Waste Pile	
Acetate Core	Hexane		Municipal Treatment	Ending Time (24 Hr)
Paper Cap	Methylene Chloride	Storage Tank	Influent	Ending Time (24 Hr) / 005
Teflon Cap	Other (Specify):	Тор	Effluent-Cl	1005
Foil Cap		Middle	Effluent-Non Cl	Beginning Date
Other	Precleaned	Bottom	Sludge	Yr Mo Day
VIII01	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Truck	Ambient	
Preservation	Glasswake From ESS	Drum	Lake	
		Tank	Stream	Reginalna Time (24 Hz)
Acid	HEUN ESS	Other	Stream	Beginning Time (24 Hr)
Solvent		Other	-1	
Chemical	•	Mella	Ocean	
Wel Ice		Wells	Estuary	pH
Dry Ice		Monitoring		
Ambient		Production		
Other		Drinking		Sample Temp. (*C)
 		Private		
 Sample Location De	escription:			
<i></i>	P. Wine	~ ~		DO (mg/l)
Goose	fary - HW C	73		
				
				Cond. (uMHOS/CM)
				Salinity/9/
 				Salinity(%,)
Remarks:				
Donald 1	N . N I .	٠. ا		
1 exchbrate	sham com	(2.		Sample Split
	NIT	3-2001	Glass JAR	☐ Yes 50 No
1-14 1	Plastic VAR and	1 2-50KI	C 440 0 1/1 =	LI 182 UV NO
	1 1/00			If Yes With Whom?
Cool	ANION AWALYS Plastic TAR AND to 4°C			Receipt D Ves D No.
				Receipt
Form: ETR 890-11-82-2				i

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Project Name	cose FARM SA	moling Eve	ent	Samples to:
Callestonia M Day	100/H. HERCADO A	441100	124	
Collector(s) 1 2 2 2	BANERCHES A	ittiliation		Bact Bio Chem Other
SAMPLING METHO Kemmerer De Niskin Net	D (Circle) redge Ponar Manual Seine Trawi Bucket	LDMS CODE	ODE	Station No.
				15F-19W-1016
Trowel Crear	n Dipper	STA. TYPE CO	DDE	Sample Depth (Ft.)/Fac. Loc. Code
Other Louis	Flan			52p.o 50p (1.1) 20. 200. 0000
Other	77700			
SUBSTRATE TYPE (Circle) Aqueous S	ediment Sludg	e Oil Biological	Lab Number
		tract Other ()	203320
BOD — Seed Suppli	ied 🗆 Yes 🗆 No	Source:		Type of Sample
Sample F	Preparation (Circle)	Sample S	Source Type (Circle)	Grab Composite
Container	Cleaning Procedure	Landfill	Industrial	Time Space
Glass Jar	Detergent Wash	Leachate	Effluent	
Plastic Jac	Water Rinse	Drum -	Process Stream	
		Test Well	Holding Pond	Collection (Ending) Date
Metal	Acid Rinse	4		917 100 Day
POA Viai	Solvent Rinse:	Depth:	Drum	77/1009
Cubitainer	Acetone	Other:	Waste Pile	Ending Time (24 Hr)
Acetate Core	Hexane		Municipal Treatment	Enoing ville (24 vil)
Paper Cap	Methylene Chloride	Storage Tank	Influent	11/1/1/1/1/1 まり
Teflon Cab	Other (Specify):	Тор	Effluent-Cl	
Foll Cap	10 .	Middle	Effluent-Non Cl	Beginning Date
Other	Recleaned	Bottom	Sludge	Yr Mo Day
<u> </u>		Truck	Ambient	
Preservation	Glassware	Drum	Lake	hannadah
	From ESS	Tank	Stream	Posinning Time (24 Hr)
Acid	TROM ESS	1	1	Beginning Time (24 Hr)
Solvent		Other	Pond	
Chemical			Ocean	
Wet ice		Wells	Estuary	рН
Dry Ice		Monitoring	1	
Ambient		Production	1	
Other	1	Drinking	1	
		Private	1	Sample Temp. (*C)
Sample Location De	ecciption:			7
oumpie cocution be				
				DO (mg/l)
	En Unido	•		
Coose	FARM - MW O			
	The state of the s			Cond. (uMHOS/CM)
				Salinity(% _e)
Remarks:	1			
Perchlorat	e ANION ANALY	5/5 :		Sample Split
= 11-4	Plastic JAR AND to 4°C	1 3-250M	1 Glass JAR	☐ Yes ☐ No
# - / C/	1 400	-		If Yes With Whom?
Coo/	かって			Receipt Yes No
				1.000pt - 100 - 100

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				L-12	<u> </u>
		soose fary o		C END	Samples to:
	Collector(s)	NNO/H. HERCADDA	ffiliation	SIEPH	Bact Bio Chem Other
	SAMPLING METHO	D (Circle)	LDMS CODE		
		redge Ponar Manual	LDM3 CODE		Station No.
	Niskin Net	Seine Trawi Bucket	DATA BASE C	ODE	GF-WW-OS
	Trowel Crean	n Dipper	STA. TYPE CO	DE	
	Automatic	· E()			Sample Depth (Ft.)/Fac. Loc. Code
	Other	4 Flow)			
	SUBSTRATE TYPE (Circle) Aqueous S	ediment Sludg	e Oil Biological	Lab Number
,	•	Solvent Ex	tract Other ()	203321
	BOD - Seed Suppli	ed 🗆 Yes 🗆 No	Source:		Type of Sample
	Sample P	Preparation (Circle)	Sample S	ource Type (Circle)	Grab Composite
	Container	Cleaning Procedure	Landfill	Industrial	Time Space
(Glass Jar	Detergent Wash	Leachate	Effluent	
<	Plastic Jar	Water Rinse	Drum	Process Stream	Collection (Ending) Date
	Metal	Acid Rinse	Test Well	Holding Pond	Yr Mo Dax
	POA Vial	Solvent Rinse:	Depth:	Drum	17/10019
	Cubitainer	Acetone Hexane	Other:	Waste Pile Municipal Treatment	Ending Time (24 Hr)
	Acetate Core Paper Cap	Methylene Chloride	Storage Tank	Influent	
	Teflon Cap	Other (Specify):	Top	Effluent-Cl	<u> </u>
`	Foil Cap	باما	Middle	Effluent-Non Cl	Beginning Date
	Other	Precleaned	Bottom	Sludge	Yr Mo Day
		Glassware	Truck	Ambient	
	Preservation		Drum	Lake	
	Acid	From ESS	Tank	Stream	Beginning Time (24 Hr)
	Solvent		Other	. Pond	
	Chemical			. Ocean	
	evel ice		Wells Monitoring	Estuary	рН
	Dry Ice Ambient		Production		
	Other		Drinking		
			Private		Sample Temp. (*C)
	Sample Location De	scription:	1		11 1 1 1
					
	_	F 44.156			DO (mg/l)
	Goose 1	Farm - MWOS	•		
					Cond. (uMHOS/CM)
		26 2 m			
					Salinity(%,)
	Remarks:		/		
	Parklinda	ANCON ANAL	4515:		
•	PERCHERATE	, , , , , , , , , , , , , , , , , , ,	1 2 25	mul Gless TAR	Sample Split
	1-14	ANION ANAL Plastic JAR 1	ma 3-63		☐ Yes ☐ No
	Coo	1 to 4°C			If Yes With Whom?
					Receipt Yes No
					ĺ

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Project Name _	008e Farm 5	AMPlake	Event	Samples to:
Collectories M De	NNO M. HERCADO	Affiliation	S. EPA	Bact Bio Chem Other
Collector(s) 2 3 3 C	7.00	Amination		- Back Bio Oliver Ottiver
SAMPLING METHO Kemmerer Di Niskin Net Trowel Crear	redge Ponar Manual Seine Trawl Bucket	DATA BASE	CODE	Station No.
	n Dipper	STA. TYPE C	3DC	Sample Depth (Ft.)/Fac. Loc. Code
Automatic	F	- }		Sample Depth (1.//1 ac. Loc. Code
other Zoa	Prou			
SUBSTRATE TYPE (Circle) Aqueous	Sediment Slud	ge Oil Biological	Lab Number
•	Solvent Ex	ctract Other ()	203322
BOD — Seed Suppli	ied 🗆 Yes 🗆 No	Source:		Type of Sample
	Preparation (Circle)		Source Type (Circle)	Grab / Composite
	Cleaning Procedure	Landfill	Industrial	
Container	 			Time Space
CHASS JAL	Detergent Wash	Leachate	Effluent	
Plastic Jar	Water Rinse	Drum	Process Stream	Collection (Ending) Date
Metal	Acid Rinse	Test Well	Holding Pond	Yr Mo Day
POA Vial	Solvent Rinse:	Depth:	Drum	1977/009
Cubitainer	Acetone	Other:	Waste Pile	1222997
		Oliver.		Ending Time (24 Hr)
Acetate Core	Hexane		_ Municipal Treatment	
Paper Cap	Methylene Chloride	Storage Tank	Influent	11/14/30
Teflon Cap	Other (Specify):	Тор	Effluent-Cl	
Foil Cap	Precleaned Glasswarp From ESS	Middle	Effluent-Non Cl	Beginning Date
Other	recommed	Bottom	Sludge	Yr Mo Day
	Glassings	Truck	Ambient	
Preservation	O Cass are	Drum	Lake	
Acid	FRAM ESS	Tank	Stream	Beginning Time (24 Hr)
	1			Deginning Time (24 m)
Solvent	· 	Other	_ Pond	
Chemical	.}		_ Ocean	
Wet Ice		Welis	Estuary	pH
Dry Ice	}	Monitoring	İ	
Ambient		Production	ļ	
Other	1	Drinking	1	\
		Private	1	Sample Temp. (°C)
Sample Location De	escription:	1	1	
Goose	FARM KHW-	608B		DO (mg/l)
				Cond. (uMHOS/CM)
	₹ _ 1.5 ±			
				Salinity(%)
				Salinity(%,)
Remarks:		_		
0 11	/ /	Linkers	•	}
reachwa	eate HNION	MANASIS	•	Sample Split
111+01	lache Tax Au	d 3-250	ul Glass JAR	□ Yes Ø No
1-12,70	eate ANION. Astro TAX ANI to 40 C	_ •		If Yes With Whom?
(20)	to 40 ('			
2001	, ,			Receipt 🗆 Yes 🗆 No
Form: FTB RPD-11-82-2				

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FIELD DATA SHEET

Project Name 5	ose fram S	ampline E	went	Samples to:
Collectoria M. DEN	WOTH HERCADO A	filiation Ucc		
Collector(s) - 1700	NO MINERALDO A	milation		Bact Bio Chem Other
SAMPLING METHOD	(Circle)	T		
	•	LDMS CODE		Station No.
Kemmerer Drec		DATA BASE C	ODE	
Niskin Net S	Seine Trawl Bucket	DATA BASE C	ODE	15F-4W-168 11
Trowel Cream	Dipper	STA. TYPE CO	DDE	
Automatic				Sample Depth (Ft.)/Fac. Loc. Code
Other	1/0w)			
		<u>.l</u>		4
SUBSTRATE TYPE (Cir	rcle) Aqueous Se	ediment Sludg	e Oil Biological	Lab Number
SUBSTRATE TIFE (OII	(cie) Adreous Si	samient Siday	e On Biological	Lab Number
	Solvent Ext	ract Other ()	202222
			· · · · · · · · · · · · · · · · · · ·	203323
BOD — Seed Supplied	J □ Yes □ No	Source:		Type of Sample
Sample Pre	paration (Circle)	Sample S	ource Type (Circle)	Grab Composite
	Cleaning Procedure	Landfill	Industrial	Time Space
	Detergent Wash	Leachate	Effluent	- V
	•			<u> </u>
	Water Rinse	Drum	Process Stream	Collection (Ending) Date
	Acid Rinse	Test Well	Holding Pond	GYT MO Day
POA Vial	Solvent Rinse:	Depth:	Drum	117171/1010191
Cubitainer	Acetone	Other:	Waste Pile	
Acetate Core	Hexane	l	Municipal Treatment	Ending Time (24 Hr)
Paper Cap	Methylene Chloride	Storage Tank	Influent	
	Other (Specify):	Top	Effluent-Cl	
	1	1 '	Effluent-Non Cl	Beginning Date
Foil Cap	Precleaned	Middle	l l	
Other/	LE COLUNE U	Bottom	Sludge	Yr Mo Day
	Glass wave up	Truck	Ambient	
Preservation	2	Drum	Lake	
Acid	tream ESS	Tank	Stream	Beginning Time (24 Hr)
Solvent		Other	Pond	
Chemical			Ocean	
		Wells	Estuary	
Wel Ice			Estuary	pH
Dry Ice		Monitoring	ľ	
Ambient		Production	i	1 _ 1 1
Other		Drinking	i	Sample Tarra (IC)
		Private	1	Sample Temp. (°C)
Sample Location Desc	crintion:	•	·	7
Campie Location Desc				
				DO (mg/l)
/ _ '	Contract to the second			
Goose -				
Googe	, Ma	16B		
Goose	HW.	16B		Cond. (uMHOS/CM)
Gose	Hay HW	16B		Cond. (uMHOS/CM)
Goose ,	HW.	16B		Cond. (uMHOS/CM)
Goose ,	HW.	16B		
Cose	in HW	16B		Cond. (uMHOS/CM) Salinity(%a)
Remarks:	in HW	16B		
Remarks:				
Remarks:				Salinity(% _a)
Remarks:				
Remarks:			. (Glass JAOS	Salinity(% _a)
Remarks: PERCHLORAT 1-14 Plas	e Anion An the JAR AND		JARS	Salinity(% _a) Sample Split
Remarks: PERCHLORAT 1-14 Plas	e Anion An the JAR AND		L Gloss JARS	Salinity(% _a) Sample Split
Remarks: PERCHLORAT 1-14 Plas			(Gloss JARS	Salinity(% _a) Sample Split Pes No If Yes With Whom?
Remarks: PERCHLORAT 1-14 Plas	e Anion An the JAR AND		L Gloss JARS	Salinity(% _a) Sample Split Yes No

Project Name	Sample	, Event	Samples to:
Collector(s) HOENO MHERCAD	DAMINISTICS II	S. EPA	Bact Bio Chem Other
Collector(s) Zacobier - Syrin (C) Colle	= Airmation		
SAMPLING METHOD (Circle)	L DMC CODE		
Kemmerer Dredge Ponar Manua			Station No.
Niskin Net Seine Trawi Bucke	DATA BACE	CODE	CC TAL SIL
	1		1 DL 1 TIN 1 0 7 1 1 1
Trowel Cream Dipper	STA. TYPE C	ODE	Sample Depth (Ft.)/Fac. Loc. Code
Automatic			Campio Sopri (1 c.) 4 do. 200. Godo
Other	-		
	_		
SUBSTRATE TYPE (Circle) Aqueous	Sediment Slud	ge Oil Biological	Lab Number
Solvent	Extract Other ()	202224
56.7.5. 1.		,	203324
BOD — Seed Supplied ☐ Yes ☐ No	Source:		Type of Sample
Sample Preparation (Circle)	Sample	Source Type (Circle)	Grab Composite
Container Cleaning Procedure	Landfill	Industrial	Time Space
Glass Jap Detergent Wash	Leachate	Effluent	-
Plastic Jar Water Rinse	Drum	Process Stream	
Metal Acid Rinse	Test Well	Holding Pond	Collection (Ending) Date
		1	Yr Mg Day
POA Vial Solvent Rinse:	Depth:	Drum	1/1/10/10
Cubitainer Acetone	Other:	_ Waste Pile	Ending Time (24 Hr)
Acetate Core Hexane		Municipal Treatment	
Paper Cap Methylene Chloride	Storage Tank	Influent	
Teflon Cap Other (Specify):	Тор	Effluent-Cl	
Foll Cap	Middle	Effluent-Non Ci	Beginning Date
OtherPrecleaved	Bottom	Sludge	Yr Mo Day
G/a	Truck	Ambient	
Preservation Acid From ESS	Drum	Lake	
Acid tenu ESS	Tank	Stream	Beginning Time (24 Hr)
Solvent	Other	Pond	
Chemical		_ Ocean	
Wet ice	Wells	Estuary	-11
Dry Ice	Monitoring	7	pH
Ambient	Production		
Other	Drinking	1	
Other	Private		Sample Temp. (*C)
	11114210		4
Sample Location Description:			
	. 04	/	DO (mg/l)
Grance Fragues PE	T INTLUENT	•	
Goose FAAM'S PE			
			Cond. (uMHOS/CM)
en en en en en en en en en en en en en e			
			Salinity(%,)
Pamarke:			
Remarks:			
Canblande Arman	fundages		
Perchlorate ANION P	10414313.		Sample Split
0117	1	1 Glass TAD	□ Yes 17_N6
1-1Lt Plastic VAR AND	3-520 r	il a rest of	
			If Yes With Whom?
Cool to 4°C			Receipt Yes No
			THE CALL THE TAIL

Project Name	ore Farm JAM	pun 20		Samples to:	
Collector(s) <u>H De</u>	NNO J. Hudek	Affiliation <u>U</u>	SIEPA	Bact Bio Chem	Other
SAMPLING METHO		LDMS CODE		Station No.	
Kemmerer D	redge Ponar Manual	DATA DACE	CODE	 	
Niskin Net	Seine Trawl Bucket	DATA BASE	CODE	16F-EF-0L	
Trowel Crear	m Dipper	STA. TYPE C	ODE	Sample Depth (Ft.)/Fac. Loc.	
Automatic				Cample Septil (1.)/1 ac. Loc.	
Other				_]	
SUBSTRATE TYPE (Circle) Aqueous S	Sediment Sluc	ige Oil Biological	Lab Number	_
		tract Other ()	203325	
BOD — Seed Suppl		Source:		Type of Sample	
	Preparation (Circle)		Source Type (Circle)	Grab Composite	
Container	Cleaning Procedure	Landfill	Industrial	Time Space	
Glass Jaco	Detergent Wash	Leachate	Effluent Brosses Street		
Plastic Jar	Water Rinse	Drum	Process Stream	Collection (Ending) Date	
Metal POA Vial	Acid Rinse Solvent Rinse:	Test Well Depth:	Holding Pond Drum	Q'r Mo Day	
POA VIBI Cubitainer	Acetone	Other:	Waste Pile	7///0//0	
Acetate Core	Hexane	J.1101.	Municipal Treatment	Ending Time (24 Hr)	
Paper Cap	Methylene Chloride	Storage Tank	Influent		et e u
leflon Cap	Other (Specify):	Тор	Effluent-Cl	1//35	
Foil Cap		Middle	Effluent-Non Cl	Beginning Date	€:
Other	Precleared	Bottom	Sludge	Yr Mo Day	
	Glassware	Truck	Ambient		
Preservation	JUSSWARE	Drum	Lake	1	
Acid	FROM ESS	Tank	Stream	Beginning Time (24 Hr)	
Solvent	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Other	Pond		
Chemical			Ocean		
Wet Ice		Wells	Estuary	pH	
Dry Ice		Monitoring			
Ambient		Production			
Other		Drinking		Sample Temp. (°C)	
	·	Private		$\dashv \sqcap \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow$	
Sample Location De	escription:				
	, ,,-	ca1 -	!	DO (mg/t)	
Gooset	ARM'S PET	CITIVENT			
·					
				Cond. (uMHOS/CM)	
	No.			Salinity(% _a)	
Remarks:					
	<i>!</i>	1			
PerchloRar	ke ANION AN	ALYSIS!		Sample Split	
1-11+0%	ke ANION AN strc TAR AND	3-250 14	1 Glass JAR	Sample Split	
	1 to 4°C	-		If Yes With Whom?	
	/ Y 70 7 C			1	·
C001				Receipt	10

Job No:

610742

Page of

Cooler ID:

COOLER CONDITION UPON RECEIPT				
Temperature of cooler upon receipt: 4°C		· · 		
temperature of temp. blank upon receipt:				
	yes	no	n/a	*Comments/Discrepancies
custody seals present				
custody seals intact				
chain of custody present				
blue ice(or equiv.)present				
blue ice(or equiv.)frozen				
rad survey completed				
SAMPLE CONDITION UPON RECEIPT		 		······································
	yes	no	n/a	*Comments/Discrepancies
all bottles labeled				
bottle custody seal present		-		
bottle custody seal intact				
samples intact				-
proper container used for sample				
sample volume sufficient for analysis				
proper pres. indicated on the COC				
VOA's contain headspace				
are samples bi-phasic(if so, indicate sample ID's):				
MISCELLANEOUS ITEMS				
	yes	no	n/a	*Comments/Discrepancies
samples with short holding times				
amples to subcontract				
ADDITIONAL COMMENTS/DISCREPANCIES PLEEN	ed only 3 contenies (1	1.40	mly + 2	802 glass lais) Lo IDH GI
				search of cooler + quibage
-0.14	al muring entimer CS			Talm sear
iohola recei	neather and		med	Lit lind it D.
CMart Lite	on De GF-RB-01 sho			(OC ruad 97-8-97) (A)
Chilch date	07 N B 7/ - 160-01 3W	NAVA 72	10-6-4	vuado 41-8-71) (24)

10/16/97

* * = please review this information and return via facsualle to the appropriate CSR (702)361-8146

Completed by / date: Lail Occums sent to the client (date initials): Notes: * = contact the appropriate CSR of any discrept. es immediately upon receipt

LAS LABORATORIES, INC. Sample Receiving Checklist

Client Name:

** Client's signature upon receipt:

LAS	LA	BO	RA	TO	RIES	S,	INC	
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LAS LA	BUNATUN	ilo, iito.	
Sample	Receiving	Checklist	

Page	of	

Client Name: 1/5 C/A	<u> </u>	i:	10 190	Looler ID:
COOLER CONDITION UPON RECEIPT				
Temperature of cooler upon receipt: 3° C				
temperature of temp. blank upon receipt:				
	yes	no	n/a	*Comments/Discrepancies
custody seals present				
custody seals intact				
chain of custody present				
blue ice(or equiv.)present				
blue ice(or equiv.)frozen				
rad survey completed				
SAMPLE CONDITION UPON RECEIPT				
	yes	no	n/a	*Comments/Discrepancies
all bottles labeled				
bottle custody seal present				
bottle custody seal intact				
samples intact				
proper container used for sample				
sample volume sufficient for analysis				
proper pres. indicated on the COC				
VOA's contain headspace				
are samples bi-phasic(if so, indicate sample ID's):				
MISCELLANEOUS ITEMS				
	yes	no	n/a	*Comments/Discrepancies
samples with short holding times	•			
samples to subcontract				
ADDITIONAL COMMENTS/DISCREPANCIES				
ADDITIONAL COMMENTS/DISCHEPANCIES				
completed by / date: Soil Colyman Colt	4/97	18 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
ent to the client (date initials):	* Client's sig	nature u	ipon receipt	
lotes: • = contact the appropriate CSR of any discrepaties	immediately upon re	ceipt		
* = please review this information and return via facsinile	to the appropriate Co	SR (702)	361-8146	
				

1016123

LAS LABORATORIES

LOGIN pH CHECK

CLIENT: Lockheed Martin Adv. Env. Sys. (LMAES) (123)

PROJECT: LM PERCHLORATE

LOGIN: L10742 MATRIX: Water(1)

NO	LAL #	CLIENT ID	PRODUCT	p#
1	L10742-1	GF-RB-01	PERCHLORATE BY 1C	(-
2	L10742-2	GF-RB-01	NONE	4
3	L10742-3	GF-RB-01	NONE	- -
4	L10742-4	GF-RB-01	NONE	6
5	L10742-5	GF-MW-14	PERCHLORATE BY IC	7
8	L10742-6	GF-Nu-14	NONE	7
7	L10742-7	GF-MW-14	NONE	7
8	L10742-8	GF-MU-14	NONE	7
9	L10742-9	GF-MU-14	NONE	7
10	L10742-10	GF-MW-14	NONE	7
11	L10742-11	GF-MW-14	NONE	7
12	L10742-12	GF-NW-14	NONE	1
13	L10742-13	GF-MW-14	HONE	7
14	L10742-14	GF-MW-14	NONE	7
15	L10742-15	GF-NW-14	NONE	7
76	L10742-16	GF-MW-14	NONE	7
17	L10742-17	GF-MW-00	PERCHLORATE BY IC	7
18	L10742-18	GF-MW-00	NONE	7
19	L10742-19	GF-MW-00	NONE	7
20	L10742-20	GF-MW-00	NONE	7
21	L10742-21	GF-MW-03	PERCHLORATE BY IC	1
22	L10742-22	GF-MW-03	NONE	7
23	L10742-23	GF-NM-03	NONE	7
24	L10742-24	GF-IM-03	PERCHLORATE BY IC	
25	L10742-25	GF-19M-06	NONE	-
26	L10742-26	GF-16W-06	NONE	7

Signature: Lail Ouhuman Date: 10/16/97

LAS LABORATORIES

LOGIN PH CHECK

CLIENT: Lockheed Martin Adv. Env. Sys. (LMAES) (123)

PROJECT: LM PERCHLORATE

LOGIN: L10742 MATRIX: Water(1)

1000				
МО	IAL #	CLIENT ID	PRODUCT	ptt
27	L10742-27	GF-MW-06	NONE	_
28	L10742-28	GF-MW-06	NONE	7
29	L10742-29	GF-MW-05	PERCHLORATE BY IC	7
30	L10742-30	GF-MW-05	NONE	
31	L10742-31	GF-MW-05	NONE	7
32	L10742-32	GF-MW-05	NONE	7
33	L10742-33	GF-MW-6088	PERCHLORATE BY IC	
34	L10742-34	GF-MW-6088	NONE	7
35	L10742-35	GF-MW-6088	NONE	
36	L10742-36	GF-MV-168	PERCHLORATE BY IC	7
37	L10742-37	GF-MW-168	NONE	7
] .	L10742-38	GF-MW-16B	NONE	7
	L10742-39	GF-MV-168	NONE	7
	L10742-40	GF-IN-01	PERCHLORATE BY IC	
	L10742-41	GF-1N-01	NONE NONE	7
	·	GF-IN-01		7
'-	L10742-42		NONE	7
-	L10742-43	GF-IN-01	NONE	7
44	L10742-44	GF-EF-01	PERCHLORATE BY IC	7
45	L10742-45	GF-EF-01	NONE	7
46	L10742-46	GF-EF-01	NONE	7
47	L10742-47	GF-EF-01	NONE	7
48	L10742-48	REPORT TYPE	DAVIS	· · · · · · · · · · · · · · · · · · ·
49	L10742-48	REPORT TYPE	INORG TYPE 2 RPT	

Signature: Sail Orly man Date: 10/16/97
Page 2



Sample Login Login Review Checklist

Login Number <u>(10742</u>

The Login Review Checklist documents the review of the information entered into the ACS database for accuracy and useability. For effective login review, five items are necessary. They are the Chain of Custody (COC) (or equivalent), the Sample Summary Report (SSR), the Login COC Report, the Sample Receiving Checklist, and the Quote/COC Reconciliation Form. This checklist should be affixed to each login package prior to distribution.

SAMPLE SUMMARY REPORT	YES	NO	<u>N/A</u>	COMMENT
1. Are all samples on the COC logged in or the proper discrepancies noted on the SSR?	<u>+</u>			_
2. Are all Client Sample IDs logged in correctly?	1			<u> </u>
3. Are all matrices indicated correctly?	_+	_		
4. Are all analyses on the COC logged in for appropriate samples?	1			
5. Are samples logged in for the proper products?	1		_	
LOGIN CHAIN OF CUSTODY REPORT	YES	NO	N/A	COMMENT
1. Are the collect, receive, and due dates correct for every sample?	+	· ——		
2. Have all appropriate comments been included?	_	-		
SAMPLE RECEIVING CHECKLIST	YES	NO	N/A	COMMENT
1. Are all discrepancies between the COC and login noted (if applicable)?	_+		iolula	? See sample receiving checkly
LOGIN pH CHECK (applicable projects only)	YES	NO	<u>N/A</u>	COMMENT
1. Has the pH of all aqueous samples been checked and the report attached?	_+	_		
Login Specialist signature date	Second	Ary Review	er signature	210116(9) date
Project Management signature date			•	•

CHAIN OF CUSTODY RECORD

Environmental Services Division
Environmental Services Division

	11		*	11		203323 203323 203323	203321 203320 203321	203317	# F	
		2)	i Offi	tichapi		4	- 6 - 0 a	1 S	Number 2	• •
•	•	85.		1	373	GF-HW-60	GF-MW-06 GF-MW-06	GF-HW-N-19		Plum
			13	5	000		2 4 4 2		Sample	Joos Fram St Plunsted Township,
The state of the s			FEDERO AIR 6:11-3 417828 417828	X	tov.	Same Same	JAME AS JAME AS	PERCHADRATE ANION ANNHSIS: 3-111	•	ion S
2			4178284183 4178284143 4178284143	A SOL		A A A	203318 203318 203318	Anias Au		Ste Ocean
7	3			*	330	203318 203318 203318 203318	203318 203318	walysis: 3-		مہ رہ
× 1	Ī	10 + ft	1530	Y	100			4512 5: 3-1		park
4/0	î	1048	7		3 Do			1-11-1		County, NJ
		ECH11			203		K JAR		€	
		4:	•		-V.5		** W-25		•	
9	Change of	0 / A 3 0			グバス		2			
			Company 1	ž į	5,2	and the	Ghass JAR	3-250 ml Glass JAR		
		Angle Control	·	35	3.6		ř	P JAR	1884. 1884.	



LAS Laboratories SAMPLE SUMMARY REPORT (su02 S1) Lockheed Martin Adv. Env. Sys. (LMAES)

			********************* *	
				<u> </u>
GF-EF-01	j	L10742-44	Water	PERCHLORATE BY IC
	1	L10742-45	Water	NOME
<u> </u>	Ā	L10742-46	Water	HOME
		L10742-47	Water	NONE
GF-IN-01	7	L10742-40	Water	PERCHLORATE BY IC
	1 1	L10742-41	Water	HONE
*		L10742-42	Water	MONE
	7	L10742-43	Water	NONE
GF-MW-00		L10742-17	Water	, PERCHLORATE BY IC
		L10742-18	Water	NONE
		L10742-19	Water	HONE
		L10742-20	Water	NGNE
GF-WW-03		L10742-21	Water	PERCHLORATE BY IC
		L10742-22	Water	HOME
		L10742-23	Water	NOME &
		L10742-24	Water	NONE
GP-NW-05		L10742-29	Water	PRINCEL PRATE BY IC
		L10742-30	Weter	MOME
		L10742-31	Water	MONE
		L10742-32	Water	MONE
GP-HW-06	1	L10742-25	Water	PERCHLORATE BY IC
	•	L10742-26	Water	MONE
		L10742-27	Water	HOME
		L10742-28	Water	NONE
GF-HW-14		L10742-5	Water	PERCHLORATE BY IC
		L10742-6	Water	NONE
		L10742-7	Water	NONE
		L10742-8	Water	MONE
		L10742-9 L10742-10	Water Water	MOME
		L10742-10 L10742-11	Water	NOME
		L10742-12	Water	WOME.
		L10742-13	Water	NONE
	< ia	L10742-14	Water	NOME
	*	L10742-15	Water	MOME
· · · · · · · · · · · · · · · · · · ·	Š	L10742-16	Water	NGME
GF-WW-16B		L10742-36	Water	PERCELORATE BY IC
		L10742-37	Water	NOME
		L10742-38	Weter	NOME
		L10742-39	Water	NOME
GF-WW-608B		L10742-33	Water	PERCHLORATE BY IC
		L10742-34	Water	MONE
		L10742-35	Water	HOME
GF-RB-01		L10742-1	Water	PERCHLORATE BY IC
		L10742-2	Water	NONE

LAS Laboratories SAMPLE SUMMARY REPORT (su02 S1) Lockheed Martin Adv. Env. Sys. (LMAES)

ilent sam (* Kusha)		Semple Burber	Section Section	
		L10742-3	Water	MORE
	•	L10742-4	Water	MOME
REPORT TYPE		L10742-48	Water	DAVIS
		L10742-48	Water	INORG TYPE 2 RPT

SAMPLE RESULTS

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-RB-01 Date Collected: 08-OCT-97

Matrix:

Water

Login Number: L10742 Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL ·	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	. 1	U _.	mg/L	17-OCT-97	L10742-1

LAS Laboratories, Inc.

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-MW-00 Date Collected: 08-OCT-97

Matrix:

Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil.	Qual	Units	Analyzed Lai	o 10
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	υ	mg/L	17-OCT-97 L10	0742-17

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-MW-14 Date Collected: 08-OCT-97

Matrix: Water Login Number: L10742 Date Received: 16-OCT-97

Constituent	Method	Hatch	Value	MDL	RDL	Dil.	Qual	Units	Analyzed L	ab IO
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	ŭ	mg/L	17-0CT-97 L	10742-5

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-MW-03 Date Collected: 09-OCT-97

Matrix: Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Di1	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	ט	mg/L	17-OCT-97	L10742-21

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-MW-06 Date Collected: 09-OCT-97

Matrix:

Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method		Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID ,
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	υ	mg/L	17-0CT-97	L10742-25

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-MW-05 Date Collected: 09-OCT-97

Matrix:

Water

Login Number: L10742 Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RD).	bil	Qual	Unics	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	υ	mg/L	17-0CT-97	L10742-29

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-MW-608B Date Collected: 09-OCT-97

Matrix:

Water

Login Number: L10742 Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	υ	mg/L	17-OCT-97	L10742-33

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-MW-16B Date Collected: 09-OCT-97

Matrix:

Water

Login Number: L10742
Date Received: 16-OCT-97

Constituent	Method	Batch .	Value	MDL	RDL.	Dil .	Qual	Units	Analyzed	Leb ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	υ	mg/L	17-OCT-97	L10742-36

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-IN-01 Date Collected: 10-OCT-97

Matrix:

Water

Login Number: Date Received: 16-OCT-97

Constituent		Batch	Value	MDL	RDL	Di1	Qual	Units	Analyzed Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-OCT-97 L10742-40

WET CHEM DATA REPORT

Account Name: Lockheed Martin Adv. Env. Sys. (LMAES)

Project Name: LM PERCHLORATE

Project Desc:

Client Sample ID: GF-EF-01 Date Collected: 10-OCT-97

Matrix:

Water

Login Number: L10742 Date Received: 16-OCT-97

Constituent	Method	Batch	Value	MDL	RDL ,	Dil	Qual	Units	Analyzed	Lab ID
PERCHLORATE	PERCH	54764	<0.0010	0.0010	0.0050	1	U	mg/L	17-0CT-97	L10742-44

METHOD BLANK DATA SUMMARY

Login/SDG Number: L10742

Analyte	Batch	Date Analysed		MB Result		RDL	Units	Data Cual
							1	ļΠ
Perchlorate	54764	17-OCT-97	54764MB	<0.0010	0.0010	0.0050	mg/L	U

RPT NAME: genionqc2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

MATRIX SPIKE DATA SUMMARY

Login/SDG Number: L10742

Analyte	Batch 1D	Date Analyzed	Client ID	LAL ID	i ib	MS Result	SMP Result	Known Value	Units	¥ Rec	Data Qual	QC Limits
Perchlorate	54764	 17-0CT-97	 GF-MW-14	L10742-5	54764MS	0.360	<0.0010	0.375	 mg/L	96		75-125

RPT NAME: geniongc2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

MATRIX SPIKE DUPLICATE DATA SUMMARY

Login/SDG Number: L10742

Analyte	Batch	Date Analyzed	Client ID ID	LAL ID	±	MS Result		MSD Result	Known Value	REC	RPD	Deta Units Qual	REC RPD	
Perchlorate	154764	 17-0CT-97 0	GF-MW-14	 L10742-5	 54764MSD	0.360	 96.	10.353	0.375	194.	12.0	 mg/L	 75-125 20	1

RPT NAME: genionqc2 TYPE (S-SDG, L-Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg

LCS DATA SUMMARY

Login/SDG Number: L10742

	Analyte	Batch ID	Date Analyzed	LAL 1D	LCS Result	Known Value	Units	k Rec	Data Qual	QC Limits
ļ	[,_			
- I	Perchlorate	54764	17-OCT-97	54764LCS	0.234	0.250	mg/L	94		80-120

RPT NAME: genionqc2 TYPE (S=SDG, L=Login): L LIST: ANALYTICAL TRACE: Y SOLIDS ADJUSTED: N/A UNITS: mg